



Mathematics Curriculum Intent Progression of Skills and Knowledge

Our Vision for Mathematics

We believe that all children are capable of understanding and doing mathematics and aim to promote a positive can-do attitude to the subject. We intend for all children to become fluent in the fundamentals of mathematics, reason mathematically by giving proof and justifications and to solve problems, including those in real life contexts; moving beyond the parameters of the classroom. We utilise mistakes and misconceptions as an essential opportunity for learning and growth.

At St Mary's, it is our fundamental belief that 'everyone can do Maths' and we want to ensure that all our pupils become confident and resilient mathematicians.

Spirituality Statement

In Maths we believe that all children are capable of succeeding, as in the story of the lost sheep (Luke 14: 3 - 5a) Then Jesus told them this story: Suppose one of you has 100 sheep, but he loses one of them. Then he will leave the other 99 sheep alone and go out and look for the lost sheep. The man will keep on looking for the lost sheep until he finds it. And when he finds it, the man is very happy.

Cultural Capital

(Experiences that every child should have).

- Opportunities to apply their maths to real life contexts and to solve problems (this is often done in a cross-curricular way e.g.: in D&T working out how much to sell a finished product for)
- Take ownership in planning for trips and visits by working out costings and if they need to raise money
- Have opportunities to try things out, make mistakes and learn from their mistakes

Place Value				
	Counting	Represent	Use PV & Compare	Problems and Rounding
Year 1	- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number - Count objects - Count objects from a larger group - Count on from any number - 1 more - 1 less - Fewer, more, same - Less than, greater than, equal to - - Count numbers to 100 in numerals; count in multiples of 2s, 5s and 10s, - Counting forwards and backwards within 100	- Identify and represent numbers using objects and pictorial representations - Sort objects - Represent objects - The number line - Read and write numbers to 100 in numerals - Read and write numbers from 1 – 20 in numerals and words - Recognise numbers as words	- Given a number, identify one more and one less - Compare groups by matching - Compare numbers - Order objects and numbers - Partition numbers	
Year 2	- Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forwards and backwards - Count in 2s, 5s and 10s - Count objects to 100 by making 10s - Count in 3s	- Read and write numbers to at least 100 in numerals and in words - Numbers to 20 - Write numbers to 100 in words - Write numbers to 100 in expanded form - Identify, represent and estimate numbers using different representations, including the number line	- Recognise the place value of each digit in a 2-digit number (tens and ones) - Recognise tens and ones - Use a place value chart - Partition numbers to 100 - Flexibly partition numbers to 100 - Compare and order numbers from 0 up to 100, using < > and = signs - Compare objects - Compare numbers	Use place value and number facts to solve problems

		-10s on the number line to 100 -10s and 1s on the number line to 100 -Estimate numbers on a number line	-Order objects and numbers	
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Addition and Subtraction				
	Recall, Represent, Use	Calculations	Solve Problems	
Year 1	- Read, write and interpret mathematical statements involving addition, subtraction and equals signs - Part-whole model - Represent and use number bonds and related subtraction facts within 20 - Number bonds within 10 - Systematic number bonds within 10 - Number bonds to 10	- Add and subtract one-digit and two-digit numbers to 20, including zero - Introduce parts and wholes - Write number sentences - Fact families – addition facts - Addition – add together - Addition – add more - Fact families – the eight facts - Subtraction – take away/cross out (How many left?) - Take away (How many left?) - Subtraction on a number line 7 Add or subtract 1 or 2 -	- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ - Addition problems - Find a part - Subtraction – find a part	
	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:	- Solve problems with addition and subtraction; ➤ Using concrete objects and pictorial representations, including those involving	

Year 2	-Bonds to 10 -Fact families - addition and subtraction bonds within 20 -Related facts -Bonds to 100 (tens) • Show the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems - Mixed addition and subtraction	➤ A two-digit number and ones ➤ A two-digit number and tens ➤ Two, two-digit numbers ➤ Adding three one-digit numbers -Add and subtract 1s -Add by making 10 -Add three 1-digit numbers -Add to the next 10 -Add across a 10 -Subtract across 10 -Subtract from a 10 -Subtract a 1-digit number from a 2-digit number (across a 10) -10 more, 10 less - Add and subtract 10s - Add two 2-digit numbers (not across a 10) - Add two 2-digit numbers (across a 10) - Subtract two 2-digit numbers (not across a 10) - Subtract two 2-digit numbers (across a 10)	numbers, quantities and measures ➤ Applying their increasing knowledge of mental and written methods - Compare number sentences - Missing number problems	
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Multiplication and Division				
	Recall, Represent, Use	Calculations	Solve Problems	
Year 1	- Count in 2s -Count in 5s -Count in 10s -Make equal groups -Add equal groups -Make arrays -Make doubles -Make equal groups – grouping -Make equal groups - sharing		• Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	
Year 2	• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot - Recognise equal groups -Make equal groups -Add equal groups -Multiplication sentences using the x symbol -Multiplication sentences from pictures -Use arrays -Make doubles	• Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs -2 x table -5 x table -10 x table -Divide by 2 -Divide by 5 -Divide by 10	• Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts	

	-Make equal groups sharing -Make equal groups grouping -Odd and even numbers			
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Fractions, Decimals, Percentages				
	Recognise and Write	Compare	Calculations	
Year 1	• Recognise, find and name a half as one of two equal parts of an object, shape or quantity • Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity -Find a half -Find a quarter			
Year 2	• Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$ of a length, shape, set of objects or quantity -Recognise equal parts -Recognise a half -Find a half -Recognise a quarter -Recognise a third -Find a third -Find three quarters	• Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$	• Write simple fractions for example $\frac{1}{2}$ of $6 = 3$ -Unit fractions -Non-unit fractions -Count in fractions	

Measurement				
	Using Measures	Money	Time	
Year 1	- Compare, describe and solve practical problems for: ➤ Lengths and heights, e.g. long/short, longer/shorter, tall/short, double/half. ➤ Mass/weight, e.g. heavy/light, heavier than/lighter than. ➤ Capacity and volume, e.g. full, empty, more than, less than, half, half full, quarter ➤ Time, eg. Quicker, slower, earlier, later - Measure and begin to record the following: ➤ Lengths and heights ➤ Mass/weight ➤ Capacity and volume ➤ Time (hours, minutes, seconds)	- Recognise and know the value of different denominations of coins and notes -Recognising coins - Recognising notes - Counting in coins	- Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening) - Recognise and use language relating to dates, including days of the week, weeks, months and years - Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times - Before and after -Dates -Time to the hour -Time to the half hour -Writing time -Comparing time	

	-Compare lengths and heights -Measure lengths -Weight and mass -Measure and compare mass -Measure capacity -Compare capacity			
Year 2	• Choose and use appropriate standard units to estimate and measure: ➤ Length and height in any direction (m/cm) ➤ Mass (kg,g) ➤ Temperature ➤ Capacity (litres/ml) to the nearest appropriate unit ➤ Using rulers, scales, thermometers and measuring vessels • Compare and order lengths, mass, volume/capacity and record the results using <, > and = - Compare lengths and heights - Measure lengths (1) - Measure lengths (2) - Measure length (cm)	• Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value • Find different combinations of coins that equal the same amounts of money • Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change - Recognising coins and notes -Count money – pence -Count money – pounds (notes and coins) -Count money – notes and coins -Select money -Make the same amount -Compare money -Find the total -Find the difference	• Compare and sequence intervals of time • Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times • Know the number of minutes in an hour and the number of hours in a day - Telling time to the hour -Telling time to the half hour -O'clock and half past -Quarter past and quarter to -Telling time to 5 minutes -Writing time -Hours and days -Find durations of time -Compare durations of time	

	-Measure length (m) -Compare lengths -Order lengths -Four operations with lengths - Describe position - Introduce weight and mass -Measure mass -Compare mass -Measure mass in grams -Measure mass in kilograms -Introduce capacity and volume -Measure capacity -Compare volume -Millilitres Litres -Temperature	-Find change -Two-step problems		
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Geometry				
	2-D Shapes	3-D Shapes	Position and Direction	
Year 1	• Recognise and name common 2-D shapes, for example, rectangles (including squares), circles and triangles - Recognise and name 2-D shapes - Sort 2-D shapes - Patterns with 2-D and 3-D shapes	• Recognise and name common 3-D shapes, for example cuboids, including cubes, pyramids and spheres - Recognise and name 3-D shapes - Sort 3-D shapes - Patterns with 2-D and 3-D shapes	• Describe position, direction and movement, including whole, half, quarter and three-quarter turns -Describe turns -Describe position	
	• Identify and describe the properties of 2-D shapes, including the number of sides and	• Recognise and name common 3-D shapes, for example, cuboids,	• Order and arrange combinations of mathematical objects in patterns and sequences	

Year 2	line symmetry in a vertical line - Identify 2-D shapes on the surface of 3-D shapes, for example, a circle on a cylinder and a triangle on a pyramid. - Compare and sort common 2-D shapes and everyday objects -Recognise 2-D shapes - Count sides on 2-D shapes - Count vertices on 2-D shapes - Draw 2-D shapes - Lines of symmetry on shapes - Use lines of symmetry to complete shapes - Sort 2-D shapes	including cubes, pyramids and spheres - Compare and sort common 3-D shapes and everyday objects -Recognise 3-D shapes - Count faces on 3-D shapes - Count edges on 3-D shapes - Count vertices on 3-D shapes - Sort 3-D shapes - Make patterns with 2-D and 3-D shapes	- Use mathematical vocabulary to describe position and direction and movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise, anti-clockwise) - Describe movement -Describe position -Describe turns - Describe movement and turns - Making patterns with shapes	
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Statistics				
	Present and Interpret	Solve Problems		
Year 1				
Year 2	- Interpret and construct simple pictograms, tally charts, block diagrams and simple tables -Make tally charts -Draw pictograms -Interpret pictograms -Block diagrams	- Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity - Ask and answer questions about totalling and comparing categorical data		

Curriculum Implementation

At St Mary's we use the White Rose scheme of work to support our teaching of Maths. While the White Rose scheme is the 'spine' of the St Mary's Maths curriculum, teachers enrich the content using our St Mary's implementation approaches and use resources from other high quality Maths websites, such as Deepening Understanding and NRICH, to provide pupils with enriched, well rounded and high-quality Maths lessons.

How do we implement the Maths curriculum?

- Through ongoing CPD through Herts for Learning so that staff have expert knowledge in Maths teaching.
- Through clearly presented key concepts.
- Through group and paired discussions that aid understanding.
- The next lesson in a sequence is taught after assessment of the prior lesson to ensure that the cohort's needs are met.
- New knowledge and skills are built on what has already been taught so that pupils can 'know more and remember more.'
- We adapt teaching at the point of learning to ensure the needs of learners are met and that they can continue to progress in sequence and deepen understanding.
- Lessons are planned and sequenced so that new knowledge and skills build upon what has been taught before. Teachers use the White Rose planning resources, alongside our St Mary's implementation approaches. We adapt the curriculum each year on an ongoing basis depending on the needs of our cohort and specific groups of children.
- Our children are encouraged to physically represent mathematical concepts. Objects and pictures are used to demonstrate and visualise abstract ideas, alongside numbers and symbols. We use the CPA approach:
 - **Concrete** – children have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.
 - **Pictorial** – children then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems.
 - **Abstract** – With the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence.
- Each class has a self-help maths resources trolley where they can independently select the resources they require.
- In each lesson challenge is visible, children are asked to reason and prove their understanding at a deeper secure level through greater depth activities.
- **Maths fluency** sessions are carried out daily, as a discrete lesson. This gives an opportunity for children to re-cap on previous learning from Maths lessons or key learning areas such as number bonds, doubles, times tables, quick re-call facts etc. Teachers are encouraged to use maths fluency sessions to immediately tackle misconceptions and consolidate learning if not understood.

How do we assess the Maths curriculum?

- Assessment in Maths takes place at the point of learning as part of formative assessment. Pupils are given direct feedback to aid immediate progress and address misconceptions.
- Assessment at the point of learning assists teachers to plan the next steps for the next day.
- Sometimes pupils will be pre-taught key concepts or gaps will be addressed after the lesson to ensure that all children can access the curriculum in the following lesson.

- Maths is assessed through teacher marking in line with the marking policy.
- Self – assessment, self-assessment with a peer, and group assessment take place to evaluate learning against the learning intention and/or against success criteria, where appropriate.
- Teachers identify a pupils' attainment by identifying their place within the progression of skills and where this fits in relation to the steppingstones between the expectations for a particular term and the milestones at the end of the term.
- Summative assessment takes place at the end of every term using the White Rose Maths assessments.